CLAIMS

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is as follows:

1. A fiber optic sensor comprising
   a body of crystalline material,
   a fiber optic element having an end surface, said fiber optic element being bonded to said body of crystalline material, and
   a reflective surface positioned by said body of crystalline material at a location separated from said end surface of said fiber optic element to form a gap.

2. A fiber optic sensor as recited in claim 1, wherein a coefficient of thermal expansion of said crystalline material is matched to a coefficient of thermal expansion of said fiber optic element.

3. A fiber optic sensor as recited in claim 1, wherein the difference between a coefficient of thermal expansion of said crystalline material and a coefficient of thermal expansion of said fiber optic element is maximized.

4. A fiber optic sensor as recited in claim 1, wherein said body of crystalline material is in the form of a tube.

5. A fiber optic sensor as recited in claim 1, further including a diaphragm providing said reflective surface.

6. A fiber optic sensor as recited in claim 1, wherein said body of crystalline material is a substantially planar substrate having a groove in a surface thereof.

7. A fiber optic sensor as recited in claim 1, wherein said crystalline material is monocrystalline material.

8. A telemetry system including a fiber optic sensor, said fiber optic sensor comprising

a body of crystalline material,

a fiber optic element having an end surface, said fiber optic element being bonded to said body of crystalline material, and

a reflective surface positioned by said body of crystalline material at a location separated from said end surface of said fiber optic element to form a gap.

9. A fiber optic sensor as recited in claim 8, wherein a coefficient of thermal expansion of said crystalline material is matched to a coefficient of thermal expansion of said fiber optic element.

10. A fiber optic sensor as recited in claim 8, wherein the difference between a coefficient of thermal expansion of said crystalline material and a coefficient of thermal expansion of said fiber optic element is maximized.

11. A fiber optic sensor as recited in claim 8, wherein said body of crystalline material is in the form of a tube.

12. A fiber optic sensor as recited in claim 8, further including a diaphragm providing said reflective surface.

13. A fiber optic sensor as recited in claim 8, wherein said body of crystalline material is a substantially planar substrate having a groove in a surface thereof.

14. A fiber optic sensor as recited in claim 8, wherein said crystalline material is monocrystalline material.